

## TUBERCULOSIS OF THE ZYGOMATIC BONE- A RARE ENTITY

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### ABSTRACT

**Aim:** This article aims to review the literature regarding tuberculosis of the zygomatic bone and also presents a rare case report of the tuberculous osteomyelitis of the zygomatic bone in a young adult male.

**Method and Material:** This is a report of a case of tuberculous osteomyelitis of the left zygomatic bone and its diagnosis and management

**Result:** The patient was asymptomatic after 2 years of follow up.

**Conclusion:** This is an interesting and rare case report of a case of tuberculosis of the body of the zygoma bone, its diagnosis, management, follow up and review of literature of this condition.

**KEYWORDS:** Tuberculous, Osteomyelitis & Zygomatic Bone

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### INTRODUCTION

Tuberculosis is one of the world's oldest diseases dating back to 4000 years ago, which has been recognized by older civilizations such as the Indian (Rig Veda, Atharva Veda, 3000 - 1800 BC and Samhita of Charaka & Sushruta, 1000 & 600 BC), Egyptian and the Greco-Roman describing consumption of lungs, a disease having symptoms and signs which could only be tuberculosis of the lungs<sup>1,2</sup>. It is a chronic granulomatous disease caused by mycobacterium tuberculosis (MTB), that can affect various systems of the body, such as pulmonary tuberculosis, which is the most common form, and various other organs such as lymph nodes and lymphatics, central nervous system, renal system, skeletal system, hepatic system, gastrointestinal system and oral cavity accounting for approximately 10% to 15% of all the patients<sup>3,4</sup>.

Out of the 30 million prevalence globally, approximately 30% or 10 million cases exist in India only<sup>5</sup>, 1-3% of the 10 million have involvement of bones & joints<sup>2</sup>. Statistically, it has been shown that there is one death from TB every 15 seconds (over two million per year), and eight million people develop TB every year<sup>2</sup>.

Human & bovine are the two types of Tubercle bacilli out of which, the latter is responsible for approximately 80% of all osteo-articular lesions below the age of 10 years<sup>2</sup>. However, in India, the human bacillus is responsible for almost all the cases of osteo-articular tuberculosis<sup>2</sup>. Pulmonary tuberculosis is often the primary lesion. Most extrapulmonary forms of tuberculosis affect organs with suboptimal conditions for bacillary growth<sup>3</sup>. Therefore, extrapulmonary tuberculosis generally have an insidious presentation, a slow evolution, and paucibacillary lesions and/or fluids<sup>3</sup>. Osteo-articular tuberculosis can occur in the spine, hip, knee, foot, elbow,

wrist, hand, shoulder and as diaphysial foci. In the head and neck region the tuberculosis infection could be by direct inoculation of bacteria into the upper aero-digestive tract due to exposure from air-borne bacilli or can be caused by haematogenous spread from another focus<sup>6</sup>.

### Case Report

A 23 year old male reported with a complaint of a persistent pus discharge over his left preauricular-parotid region for the past 2 years. He gave a history of a blunt trauma to the left side of the face 2 years back – he did not undergo any treatment for the same and did not have any complaint regarding pain while chewing or any decrease in mouth opening. On examination, it was observed that the patient had a sinus opening measuring 0.5 x 0.5 cm with pus discharge over his left parotid-preauricular region seen at a point 1.5cm from the preauricular region, 0.2 cm below the ala-tragal line, overlying skin was red and inflamed. (Figure 1-2)

His occlusion was satisfactory and mouth opening was adequate (38 mm)

On initial investigation, the Pus for AFB was found to be negative and gram staining was also found to be repeatedly negative for any bacteria on multiple occasions.

Mantoux test was found to be positive (in duration was found to be 23 mm in diameter) after 48 hours.

Blood investigations were found to be within normal limits except ESR was raised (52mm/hr).

No abnormality was detected on the chest Xray.

A CT scan was advised and a small lytic focus with cortical breach and thickening and sclerosis of the adjacent cortex with mild irregularity was seen in the body of the left zygomatic bone with a small collection (abscess) and minimal fat stranding in the adjacent subcutaneous space laterally. The adjacent masseter and temporalis muscle were normal. (Figure 4-5)

Approach: The site was approached by an extra-oral Alkayat Bramley approach under General Anesthesia and the lytic focus in the body of the zygomatic bone was exposed. Curettage was done, necrotic bone was removed and granulation tissue was curetted out and sent for histopathological examination. (Figure 6)

The histopathological report was found to be consistent with granulomatous osteomyelitis, however the Ziehl Neelsen stain for AFB bacilli was found to be negative.

The patient was then kept on regular follow up and was reviewed once every month.

At the end of the 6<sup>th</sup> month the patient reported with a mild swelling over the left preauricular region and a repeat FNAC was done which revealed tubercular caseous necrosis and acid fast bacilli were identified on Ziehl Neelsen stain.

The patient was then referred to the Department of medicine and was started on Anti tubercular therapy - 2HREZ/4HR<sub>3</sub>- isoniazid, rifampicin, ethambutol, pyrazinamide daily for two months, followed by four months of isoniazid and rifampicin was given for three times a week.

### RESULTS

After 6 months of ATT, the patient was asymptomatic and was followed up till another 2 years during which there was no pus discharge and the patient had recovered completely. (Figure 7-8)

## DISCUSSIONS

Though the prevalence of tuberculosis, infection is 30 million worldwide out of which approximately 10 million cases exist in India<sup>2</sup>, only 1-3%<sup>7</sup> have involvement of bones & joints and skull involvement in 0.2- 1.4% cases<sup>8</sup>, making tuberculosis of Zygoma a rare infection. In a review of a case series of 23 patients with tuberculosis infection of head and neck, Penfold and Revington reported just one case of tuberculosis<sup>9</sup>.

TB of facial bones is usually associated with TB elsewhere in the body, most commonly pulmonary, after breakdown of tubercular foci through the haematogenous spread of the bacilli<sup>7</sup>. Thus making involvement of maxillary sinus as the secondary lesion to the primary pulmonary tuberculosis and both the sites of the lesion may occur concurrently<sup>7</sup>. Two types of bony tuberculosis are recognized<sup>10</sup> (i) tuberculous osteitis: which starts as blood borne infection lodging in the cancellous bone and (ii) periosteal tuberculosis: which commonly affects the flat bone e.g. the sternum, skull or ribs, commences in the deeper layers of the periosteum which becomes oedematous and is soon separated from the underlying bone by granulation tissue, caseation and cold abscess formation follows the superficial structures becoming progressively adherent and invaded while the bone itself is eroded. Finally the skin is involved and the abscess discharges on the surface and secondary infection may follow.

Pillai et al<sup>11</sup> described a case of orbital tuberculosis with the involvement of the Zygoma, spread via a direct extension from the paranasal sinuses or from the hematogenous spread from a primary lesion.

## CONCLUSIONS

In our patient, even though there is a prior history of trauma to the left side of the face, it does not seem to be the causative factor for the pus discharge which was attributed due to an isolated tuberculous infection of the left zygomatic bone.

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**Conflict of interest:** None

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